

Application No.: 10/820,798

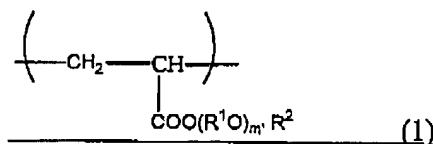
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Listing of Claims

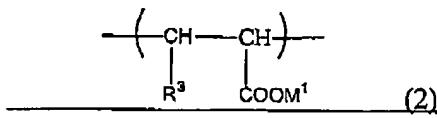
This listing of claims replaces all prior listings and versions of the claims.

Please cancel claims 2, 4 and 6 without prejudice to their reentry at some later date.

1. (Currently Amended) A polycarboxylic acid cement dispersant which provides a cement composition having a penetrating resistance value exponent of 55 MPa or more and a slump retention exponent of 80% or more, wherein the polycarboxylic acid cement dispersant comprises a polycarboxylic acid polymer having a polyoxyalkylene ester constituent unit (I) represented by the following general formula (1):



wherein R¹O may be the same or different and each represents an oxyalkylene group containing 2 to 18 carbon atoms; m¹ represents the average molar number of addition of the oxyalkylene groups and is a number of 100 to 200; and R² represents a hydrogen atom or a hydrocarbon group containing 1 to 3 atoms, and a carboxylic acid constituent unit (II) represented by the following general formula (2):



wherein R³ represents a hydrogen atom, a methyl group or -COOM²; and M¹ and M² may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium.

2. (Canceled)

3. (Currently Amended) A method of producing a concrete product which comprises adding the polycarboxylic acid cement dispersant according to claim 1 to the concrete product and a process of curing under a condition of a temperature of 30°C or more, using the polycarboxylic acid cement dispersant according to claim 1.

4. (Canceled)

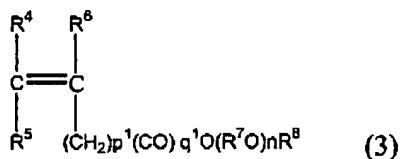
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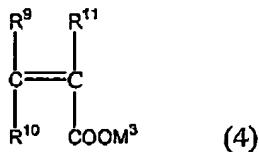
5. (Currently Amended) A method of producing a concrete product which comprises adding the polycarboxylic acid cement dispersant according to claim 1 and a process of curing by covering a periphery of a formwork with an insulating material, using the polycarboxylic acid cement dispersant according to claim 1.

6. (Canceled)

7. (Withdrawn) A method of producing a concrete product which makes use of a copolymer derived by using monomer components comprising a monomer (A) represented by the following general formula (3):



(wherein R⁴, R⁵ and R⁶ may be the same or different and each represents a hydrogen atom or a methyl group; p¹ represents a number of 0 to 2; q¹ represents a number of 0 or 1; R⁷O may be the same or different and each represents an oxyalkylene group containing 2 to 18 carbon atoms; n represents the average molar number of addition of the oxyalkylene groups and is a number of 2 to 300; and R⁸ represents a hydrogen atom or a hydrocarbon group containing 1 to 30 carbon atoms), monomer (B) represented by the following general formula (4)

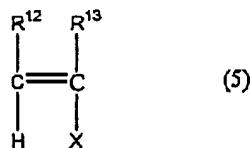


(wherein R⁹ and R¹⁰ may be the same or different and each represents a hydrogen atom, a methyl group or -COOM⁴, provided that R⁹ and R¹⁰ does not simultaneously represent -COOM⁴; R¹¹ represents a hydrogen atom, a methyl group or CH₂COOM⁵, R⁹ and R¹⁰ may be the same or different and each represents a hydrogen atom or a methyl group; and M³, M⁴ and M⁵ may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium), and

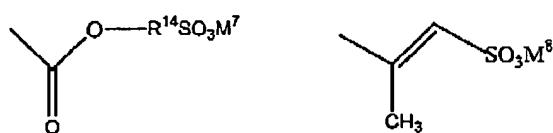
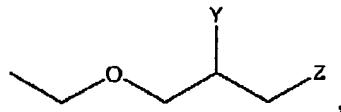
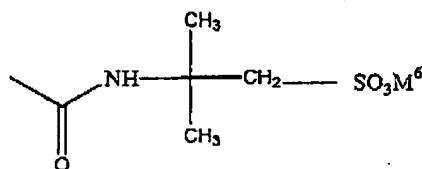
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a monomer (C) represented by the following general formula (5):



X:



(wherein R^{12} and R^{13} may be the same or different and each represents a hydrogen atom or a methyl group; Y and Z represent a hydroxyl group or $-\text{SO}_3\text{M}^9$, in which in the case where Y represents a hydroxyl group, Z represents $-\text{SO}_3\text{M}^9$, while in the case where Y represents $-\text{SO}_3\text{M}^9$, Z represents a hydroxyl group; R^{14} represents an alkylene group containing 2 to 4 carbon atoms; and M^6 , M^7 , M^8 and M^9 may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium),

wherein the mass ratio of the monomer (C) relative to the total monomer components is not less than 0.1% by mass and not more than 35% by mass.

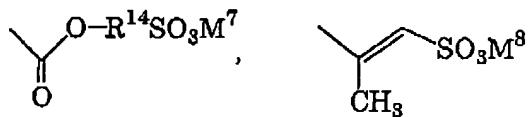
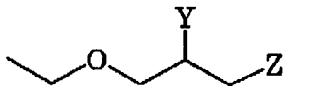
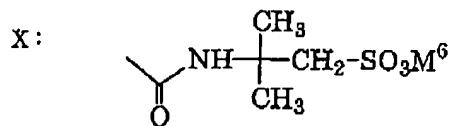
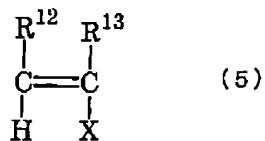
8. (Withdrawn) The method of producing a concrete product according to claim 7, which comprises a process of curing under a condition of a temperature of 30°C or more.

9. (Withdrawn) The method of producing a concrete product according to claim 7, which comprises a process of curing by covering a periphery of a formwork with an insulating material.

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10. (New) The polycarboxylic acid cement dispersant according to claim 1, which is obtained by copolymerizing the monomer components further comprising a sulfonic acid group-containing monomer represented by the following general formula (5):



wherein R^{12} and R^{13} may be the same or different and each represents a hydrogen atom or a methyl group; Y and Z represent a hydroxyl group or $-\text{SO}_3\text{M}^9$, wherein in the case when Y represents a hydroxyl group, Z represents $-\text{SO}_3\text{M}^9$, while in the case when Y represents $-\text{SO}_3\text{M}^9$, Z represents a hydroxyl group; R^{14} represents an alkylene group containing 2 to 4 carbon atoms; and M^6 , M^7 , M^8 and M^9 may be the same or different and each represents a hydrogen atom, a monovalent metal, a divalent metal, ammonium or organic ammonium.